

TM Forum Open APIs are a vital enabler of interoperability, but they are not yet fully independent

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Communications service providers (CSPs) acknowledge the need to become software-led. Indeed, this is becoming a differentiating factor between leading digital-native companies and traditional telecoms operators/CSPs. One of the obstacles to traditional CSPs' transition to a software-centric operating model is their incumbent architecture framework, which is generally developed over a long period of time and includes components from multiple vendors and in-house development work, many of which have proprietary interfaces. The resulting systems framework is highly intricate and exists in a multi-vendor environment that is reliant on legacy, non-standardised protocols, which are often not fully supported by all vendors. As a result, system upgrades and expansions are highly complex. Having standardised, open application programming interfaces (APIs) can help CSPs to address the challenges of multi-vendor silos and accelerate their ambitions of developing an interoperable, collaborative and automation-ready systems framework.

TM Forum Open APIs can help CSPs to accelerate their transition to being software-led

APIs are pieces of software that allow different applications to send and receive data seamlessly, while also allowing for the decoupling of individual applications from wider BSS/OSS. Integrating applications from different vendors into existing systems can be difficult when APIs are not standardised. For example, a CSP may not use the same APIs as the software vendor that it wants to partner with, so new bespoke interfaces have to be developed in order for the partnership to be successful. This increases both the cost of adapting CSPs' incumbent systems and the time to market for new applications. It can also contribute to vendor lock-in, where CSPs are unwilling to work with new vendors because the costs of accommodating external applications are too high.

TM Forum Open APIs are the most widely cited CSP-specific APIs within the telecoms industry for OSS/BSS and related processes. TM Forum states that its Open API programme is a "global initiative to enable end-to-end seamless connectivity, interoperability, and portability across complex ecosystem-based services, and includes a set of rest-based APIs that enable rapid, repeatable, and flexible integration among operations and management systems to make it easier to create, build, and operate complex innovative services." TM Forum anticipates that its catalogue of industry-standard open APIs can help to promote innovation among CSPs and vendors, reduce the time to market and lower the total cost of ownership by enabling users to swiftly adopt the best practices of platform-centric digital companies.

Currently, 19 CSPs have signed TM Forum's Open API manifesto. Some examples of CSPs' projects that are using TM Forum Open APIs include the following.

- **Orange eSIM cards.** Orange has used TM Forum Open APIs in its eSIM cards for car manufacturers.
- **Vodafone's Tech2025 Strategy.** Vodafone has included 43 TM Forum Open APIs in its customer engagement plan with the aim of reducing integration costs.

- **Deutsche Telekom's OneApp.** Deutsche Telekom used Open APIs to unify its customer-facing applications in five countries in Europe.

TM Forum Open APIs are gaining traction after a slow start, but are far from being a comprehensive framework that is fully independent and self-sufficient

A standardised common API framework is an essential ingredient of a software-centric operating model, especially in the multi-vendor environment that is quite common in most CSPs today. In the absence of any other widely accepted telecoms-specific API frameworks, TM Forum Open APIs are considered to be the closest to a standard template that can eventually enable software interoperability across CSPs' operations. As a result, CSPs are increasingly emphasising compliance with Open APIs in new RFPs.

TM Forum continues to invest in expanding its catalogue of APIs; the number of APIs supported has grown from 18 in 2016 to over 60 today. TM Forum is currently working on the fifth iteration of its Open API guidelines, which will include capabilities such as the enablement of multi-SDO contexts in TM Forum tooling, multi-language support and history patterns to track the transactional history of any entity.

There has been a notable increase in Open API compliance over the past year. Indeed, multiple vendors are now reporting the growing number of certified APIs in their solutions in order to demonstrate that they are prepared for an API-based future. Even so, only 5 vendors (and 1 CSP, Jio) comply with 20 or more Open APIs; most of the organisations on TM Forum's Open API conformance list have less than 10 certified APIs.

One challenge is that TM Forum Open APIs only standardise the most common system functions. Applications often have features that are too advanced to be able to be exposed through a standardised API and as a result, TM Forum Open APIs are unable to run independently as the standard template for engagement. Several vendors are therefore investing in more-generic RESTful web-based API standards, especially for functions that are not covered by TM Forum Open APIs. Indeed, some of the de facto standards and APIs used in the solutions of vendors such as Salesforce and ServiceNow have the potential to circumnavigate TM Forum Open APIs. The lack of CSP preparedness in embracing Open APIs is also a concern for many vendors; CSPs often demand compliance with Open APIs for new deployments as a futureproofing strategy.

TM Forum Open APIs have a clear role in telecoms software frameworks of the future, given how they enable CSPs to futureproof their operations management. However, they are not self-sufficient and do not guarantee interoperability between vendor or CSP-developed solutions just yet.